

REMARKS

Claims 1-13 have been canceled. Claims 18, 19 and 22 have been amended. Claims 30-32 are newly added. Claims 14-32 are currently pending in the application.

Claims 18 and 19, although previously allowed by the Examiner, have been amended to more clearly state the relationship between each claim and the claim from which each depends. One newly added claim, claim 30, depends from allowed claim 19. Claim 22 has been amended to distinguish the claimed invention from the references cited by the Examiner. Basis for this amended claim and the newly added claims are set forth in the table below:

Claim	Term/Phrase	Basis
22	"first leading electrolyte"	Specification, paragraph [0044]
	"replacing at least a portion...a second leading electrolyte"	Specification, paragraph [0048], Figure 2D
	"across the first leading electrolyte...second leading electrolyte"	Specification, paragraph [0048], Figure 2D
30, 31	"at least one of fluorescence, absorbance, refractive index and light scattering"	Specification, paragraph [0017], [0051]; original claim 2
32	"control unit operated in closed loop mode"	Specification, paragraph [0050]

No new matter has been added by the amendments. Reconsideration is respectfully requested.

Rejection Under 35 U.S.C. 102

The Examiner rejected claims 1, 2, 4, 5 and 8 under 35 U.S.C. 102(b) as being anticipated by Dadoo et al (US 5,378,334). These claims have been canceled. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Rejections Under 35 U.S.C. 103

The Examiner rejected claims 1-13 and 22-29 under 35 U.S.C. 103(a) as being obvious over Ramsey (EP 1162455 A1). The Examiner argues as follows: Ramsey discloses a method for

separating a mixture of components in a sample employing a microfluidic device having a stacking channel and a separation channel. In the method, analyte pre-concentration is performed before the separation. This method comprises applying a first electric field to stack the sample between a trailing electrolyte and a leading electrolyte; and subsequently applying a second electric field to perform the separation. The application of the second electric field is not done 'automatically' in Ramsey, but making it so would be obvious to one skilled in the field.

Applicants respectfully disagree with the rejection over Ramsey, particularly in view of the amendments. A step to change the buffer behind the sample portion is now recited in claim 22. This change in the composition of the buffer surrounding the sample plug is necessary in order to perform the separation in the manner contemplated by the invention. In the subject invention, "ITP stacking provides sample concentration, but does not provide spacing between the component species". Paragraph [0047]. The specification continues by stating that capillary electrophoretic separation may begin once the buffer behind the sample has been replaced with "a leading edge electrolyte or another electrophoretic medium". Paragraph [0048]. This change in the composition of the buffers surrounding the sample is also illustrated in the sequence of Figures 2A – 2E.

The step of changing the identity of the buffer is critical to the method of the embodiment of invention as claimed, but this step is not anticipated by Ramsey. In the methods and examples disclosed by Ramsey, the buffer is typically referred to as "the separation buffer" (see, e.g., paragraphs [0079] - [0084]), as a single, uniform composition. The examples presented only mention a single buffer composition (see, e.g. paragraphs [0083], [0086]). There is a passing reference to "leading and trailing electrolyte buffers", but the method of use of different such buffers is not described. Without more, this reference stands as an invitation to experimentation.

Moreover, the desire and the benefit of using different leading and trailing buffers *in conjunction* with the desire and benefit of changing the buffers for a separation under more favorable conditions is not disclosed or taught. In fact, Ramsey adopts the approach of compromising on the conditions useful for stacking and separating the analytes. In paragraph [0084], under conditions that maximize the stacking, "the separation efficiency suffers". The disclosure then teaches that "[a] compromise between the stacking enhancement and separation efficiency must be reached". Paragraph [0084]. Thus, Ramsey neither anticipates nor desires the ability to manipulate the composition of the various buffers used in the separation method. This ability is at the center of the subject invention.

The remainder of the claims depend from claim 22, which, as discussed above, Applicants assert is distinguished from and therefore allowable over Ramsey. Accordingly, the remaining claims should also be allowed because they depend from an allowable claim.

For the above reasons, Applicants submit that the rejections over Ramsey are no longer appropriate and respectfully request that they be withdrawn.

The Examiner also rejected claim 3 under 35 U.S.C. 103(a) as being obvious over Dadoo et al. (US 5,378,334) in view of Hernandez (WO 92/13229 A2). This claim has been canceled. Accordingly, Applicants respectfully request that the rejection be withdrawn.

In view of the above, Applicants respectfully request that the rejections be withdrawn and that the remaining claims be allowed and the application quickly passed to issue.

If any additional time extensions are required, such time extensions are hereby requested. If any additional fees not submitted with this response are required, please take such fees from deposit account 50-2266.

Respectfully submitted,



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